

BEACH CONSERVATION

BY Neal Merry



Front row L to R: Tony Horner, Neal Merry, Line Lyman. Rear L to R: Don Kendrew, John Aldrich. [Photo by Horner-Johnson-Blaisdell]

This week we begin a 4-week series of articles. Each conservation officer will write on a beach topic of his choice. Subject areas include conservation begins at the beach entrance, the beach as a geological formation, conservation and educational enforcement and the recreational carrying capacity of Duxbury Beach.

Since June more than 250 Duxbury elementary school students viewed our beach restoration film. They studied the beach, bay and marsh as part of their science program. The Duxbury Garden Club and Duxbury Community Men's Club have also seen the film.

The federally funded Neighborhood Youth Corps have 2 young men working with us on beach conservation. They are Robbie Andrews, Franklin St. and Brian McEvoy, Wadsworth Rd. T. Michael Burke, DHS work study coordinator is their supervisor.

Two weeks ago 3 finance committee members, Allen Bornheimer, Ingrid Carroll and Es Keating, toured the entire beach in the patrol Bronco.

We thank the Duxbury Garden Club for its beach nursery stock donation and the Tinkertown-Ashdod Neighborhood Associations for their tool and equipment donation.

In addition to manning the beach entrance position and cooperative beach patrols with the police department, numerous restoration projects have been completed. More in next week's **Clipper**.

BEACH CONSERVATION OFFICER

By Line Lyman

The conservation officer at the bridge is the first line of defense in Duxbury's effort to conserve its beach. The idea is to limit use of the beach only to those who have a legitimate right to the beach: i.e. non-residents and residents of Duxbury with valid beach stickers. Moderation is the clue to this particular conservation effort because it is obvious that overuse

is the problem facing the beach's survival. The more people on the beach, the greater problem.

Extremists would exclude all vehicular traffic down the beach, allowing only pedestrians and Gurnet-Saquish residents to transgress the sandy expanse. However, that would not allow the greatest pleasure to the maximum numbers and would

arouse complaints from the MBBA (Mass. Beach Buggy Ass'n.) and non-resident users of the beach who could press for state control of the beach. By establishing and enforcing protective guidelines for beach use, maximum utility and pleasure can be gained from the beach without sacrificing the beach's well being. It is for this reason that stickers are so earnestly checked.

One can see the need of mandatory beach stickers to park at the east end of the bridge or to drive down the beach because of their regulatory function. Otherwise J.Q. Public would be unmanageable and the beach would deteriorate more rapidly than it did 3-5 years ago when little or no conservation effort had been made.

It is unfortunate that stickers or lack of them inconvenience beach visitors, and it is in this area that most of the program's complaints arise. However, if exceptions are made for those residents or



Line Lyman

non-residents who brought "the wrong car," why can't they be made for those who only come to the beach "only once a summer?" A rigid policy is not always the most pleasing, but in this instance it is the most effective in curbing beach misuse. It also causes minimum inconvenience

to those who legitimately frequent the beach.

Hundreds of volunteer man-hours and thousands of dollars have been spent in recent years to help the beach rebound to a stable level. Consequently, personal sacrifice and understanding are needed now if rejuvenation of the beach is to continue. The man at the bridge checking stickers is

the first and most important stage in the regulatory and educational facet of beach conservation. He is also acting as a reminder to those entering the beach that the town cares about the prosperity of the beach as a natural resource and that it is up to the individual to continue the town's policy of beach conservation for the bet-

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terment of the beach and for the benefit of all.

Linc Lyman is a June graduate of Harvard University, majoring in government. Formal conservation experience was achieved through a summer's internship with the Student Conservation Association in 1967. Since then he has worked on several beach volunteer projects, including the Christmas tree distribution, snow fencing, and grass planting. Now, besides being one of 4 assistant beach conservation officers, he is working voluntarily as co-chairman of membership for Plymouth County Ducks Unlimited.

DUXBURY BEACH A GEOLOGICAL APPROACH

Our tidal marsh and beach area present a complex and dynamic unit of nature few persons really appreciate and understand. To fully view this interacting ecosystem would entail a rather

lengthy and technical essay, which is not my intention. In this case, I want the reader to visualize the beach and its surroundings in a fundamental geological context rather than the

popular view of the beach as the public beach or common recreational area.

The last ice age is a good starting point. Melting ice walls advanced southwards, depositing sand and gravel far out over a vast, spreading, outwash plain. Large rounded rocks tumbled along with those intruding waters until they, too, bogged down amid the scattered ice masses which strewn about the water-soaked plain, which gently sloped southward until it met the sea.

According to marine biologists at Woods Hole, George's Bank was a forested island, with coves fringed with tidal marshes. Today the North American continent is less extensive and much of the former coastal area is submerged.

At a rate of about one foot per century, submergence is still occurring, but the coastal area is just about holding its own due to the seaward transport of sands and, depending upon the area, the effects of the ocean currents.

During the early stages of submergence, the gradual shore erosion results in the production of an off-shore bar which in time builds above sea level and forms a barrier island -- in this case, Duxbury Beach. Such islands parallel the shore, separating it and an enclosed bay from the open ocean. Grass begins to take hold and grow once protected from the ocean wave onslaught, and now each successive generation of grass inches further into the now shallow water, thus eventually creating a wider and more substantial peninsula.



Tony Horner

Tony Horner took 7 months of technical Sonar and Oceanographic training at Key West, Fla. while serving in the U.S. Navy.

After his discharge he entered the University of Connecticut where he is majoring in fine arts -- in particular, oil painting.

Horner is keenly interested in and concerned with environmental preservation and protection, especially that of New England.

Eco-System

This is not just a barrier to the open ocean, but a thriving eco-system, a living entity, which supports some 40 species of plant vegetation, provides the basic nutrient exchanges which support the food chains in the sea, which literally range from plant plankton to all the forms of sea animals.

The summer beach also serves as a crucial resting spot for at least 21 species of migrating sea birds and, finally, in ecological terms, and least importantly, the beach environment provides the public with a diverse and unique recreational area.

Our growing society demands an ever-increasing need for more "open space" recreational areas, but our beaches have definite tolerances and population and vehicle capacities.

At present, relative stability exists along our beach and surrounding marsh areas, but as the population increases, so do both physical and mechanical encroachments become more visible and damaging.

So our beach is in truth, a revealing universe of unstable sand - always changing, building and breaking down - and as we have found, especially sensitive to environmental abuse.

Since we now have a major effect upon the beach environment, we also assume a major responsibility for it and, as we also have found, in the long run the quality or state of the ocean habitat will be mutually associated to the quality and enjoyment we can experience from our beach areas.

By Tony Horner

BEACH CONSERVATION

By John Aldrich



When the beach study committee was first formed in 1971, many people were unaware that any kind of a problem existed at Duxbury Beach. In fact, Jim Spinale, one of the members of this newly formed group was approached by a citizen who emphatically demanded that "Someone be hired to kill all that damn beach grass because it hurts my feet when I walk on it."

A lot of water has passed under the Powder Pt. Bridge since then. Many more people are now aware of the problems at the beach and of the conservation methods used to solve those problems. Let us hope that no others curse the beach grass because it "hurts their feet." For as most of us are aware beach grass is one of the few plants which hold the sand in place. In previous years beach erosion became so severe that during a storm in February, 1972, ocean waves broke through to the bayside in no less than 7 places. This is one of the reasons many signs and fences have been erected to protect not only the existing beach grass but also that which has been planted by many hard working volunteers.

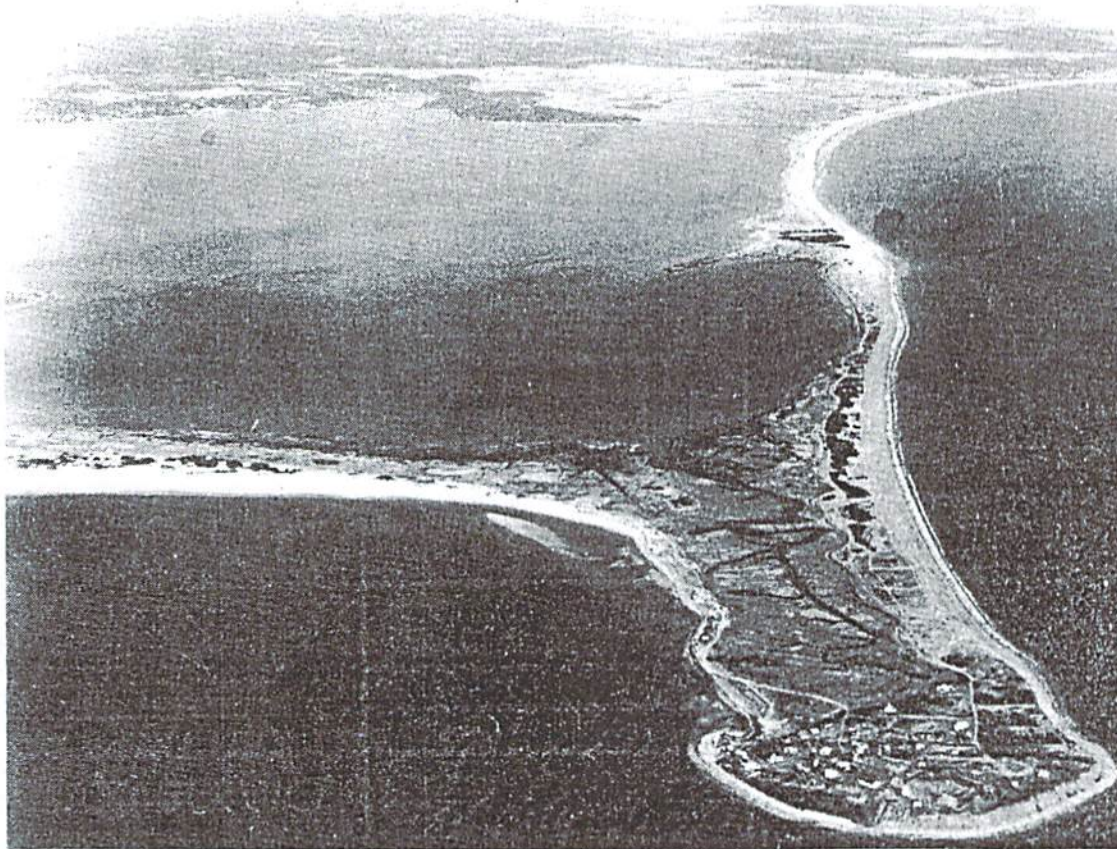
Believe it or not, these signs and fences are not enough. Much of a beach conservation officers time is taken up with what is known as "educational enforcement." For example, trying to explain to an irate Brockton taxpayer why he may not drive his brand new Cadillac down the beach buggy road to see how fast it will go over a sand dune. When on patrol we have encountered many unusual people, most of

whom come under the "irate taxpayer" heading.

One of these was a girl who decided to sunbathe out of the cold wind behind a dune. Unfortunately, this sweet young darling of the beach became uncomfortable because of all the newly planted beach grass under her blanket. She swiftly solved her dilemma by pulling out enough plants to make room for her evenly tanned figure. When this ecological transgression was discovered by officers on patrol, it was swiftly explained to her that it was a good thing one of the officers found her instead of one of the volunteers who planted the grass. Otherwise, she might have been hung from the nearest telephone pole. Subsequently she was asked to soil her hands once again by replanting the grass back in "those cute little rows." She then left the beach complaining of cracked cuticles and life in general.

Another part of a beach conservation officers duties is to enforce the existing rules and regulations. This is not as simple as it sounds; almost everyone knows rules and regulations are for someone else. Never is the human mind so active as when it is thinking up an excuse. For example a man once told me that if I did not let him park in the lot without a sticker, he would be unable to raise enough money to visit his father who was dying of cirrhosis of the liver in Virginia! When it comes to parking in the lot without a sticker people develop bizarre, fictitious, and sometimes terminal diseases that only the beach will cure. Power windows with stickers on them become curiously stuck in the down position, and no amount of energy on the part of the driver and occupants can help. But these same people will mysteriously refuse help from the officer at the bridge, and instead will turn around and drive off, presumably to look for a more qualified mechanic.

The key to enforcing the regulations on the beach is not simply telling a person what or what not to do, but to explain WHY. This is the approach a conservation officer must use, for his job is not just to control the public, but to educate. If Duxbury Beach were left untouched by human beings, it would take perfect care of itself. So we, as citizens and taxpayers of the



Town, must come to the conclusion that if there is a problem at the beach, it must be people.

It must be stated that when an officer enforces the regulations in a pleasant and informative manner, 95 percent of the people respond with apologies for their infringement, ask intelligent questions about the beach, and offer good suggestions. As a result many people leave the beach better informed than when they arrived. This is what "educational enforcement" is all about.

Since the summer season is almost over, it is fitting that those who made special contributions to the beach conservation program

be thanked for their efforts. Many thanks to the Tinkertown and Ashdod Associations and good friends, Henry and Betty McCall, for donating the funds raised at their annual softball game to the program; to the Thomsons on Olde Pasture Rd. for donating some needed snow fence; to all volunteers who have worked hard at moving Christmas trees, planting grass, and for helping out on the cleanup this past weekend; to Brian McEvoy and Robbie Andrews, and to thousands of friendly and cooperative people I have met this summer. Without your help the program would not be as far along as it is today. I hope you have had as good a summer as I.

John Aldrich has lived in Duxbury 11 years. In that time he has been involved in many conservation projects including reducing the fire hazards in the town forest and being one of the charter members and a former president of the Duxbury Recycling Center. John is currently enrolled in the University of Massachusetts as a psychology major.

Duxbury Clipper, Thursday, September 5, 1974

BEACH CONSERVATION

By Don Kendrew



Donald Kendrew is a long time resident of Duxbury. Donald is an eagle scout and a recent graduate of Paul Smith's College in New York where he received his associate degree in applied science in forest recreation.

What is recreation? Most people think of swimming, camping, hiking and fishing, which is only a final result of recreation.

Recreation is defined as any worthwhile and pleasurable experience related by the individual during his leisure time to meet a personal want or desire primarily for his own satisfaction and refreshment. The definition's key word is leisure or unobligated time.

In Duxbury, much of our leisure time is spent in 5 areas of beach-related recreation: the bridge, the beach proper, the ocean, the Bay and the flats and marshlands.

Since July 1, the conservation officer at the beach entrance has been computing the number of vehicles and people using our beach resource. This survey data will be used to better determine the recreational areas carrying capacity. Carrying capacity is the population which an area will support without undergoing deterioration.

It is well known that the carrying capacity of the dunes and vegetated areas is zero. The active ocean and bay beach areas may be divided into 2 areas with high carrying capacities: The denuded beach above the high water mark; and the lower beach or flats area which is subject to regular tidal inundation.

To date we do not have complete season data necessary to compute realistic carrying capacity figures.

Survey figures gathered during a peak beach use day provided our best present intensive use indicator. Sunday, July 21, humid temperature 90 plus. High tide 1:30 p.m. The parking lot was filled by noon: 1109 vehicles crossed the bridge during an 8-hour period (572 cars, 205 beach buggies, 332 turnarounds) the pedestrian-cyclist-sailor estimate was 1200 people. The national passenger/vehicle average is 4 times 1109 vehicles = 4436, a total of 5636 people using the beach in an 8-hour period.

In general, the key to beach use vs. deterioration is how people use the area where they travel and where they gather. Time of high tide as a population compacting or dispersing factor is critical to beach deterioration.